RM User

Volume 8:3
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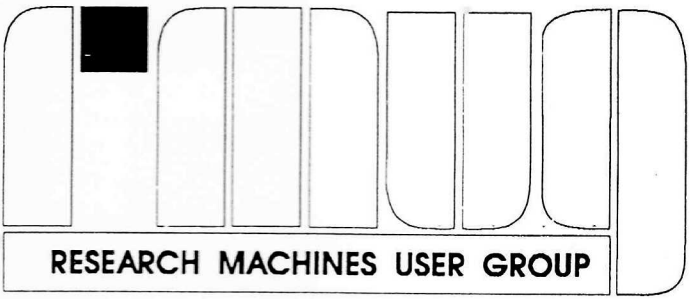

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Row3	Sairoon	144cm	31kg	56cm	74cm
Row4	Christine	150cm	42kg	61cm	71cm
Row5	Wasim	140cm	44kg	67cm	70cm
Row6	Simon	143cm	32kg	71cm	70cm
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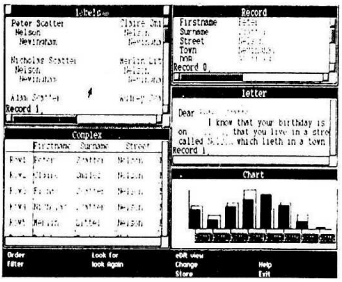

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HelpLine

The User Group exists to help its members use the computers which they have.

Many of you (about 20%) are home users of Nimbus computers and we would like to help you. Mary Mabey is a home user who has kindly agreed to let us publish her phone number; you may call her at home on 081 698 7573 if you want some advice on using your computer.

You may find that you have a problem which you feel is too trivial for Customer Support or you may have a problem with which they can't help, perhaps because you have a non-standard setup for your equipment or you are using third-party equipment. This is the time when we may be able to help.

Remember that you can telephone the User Group members in the evening or at weekends when RM is shut (and, of course, you are just bound to hit problems). Also, RM don't claim to have great knowledge of products which they don't produce such as Excel or PageMaker. They can tell you how to install the packages on their equipment and how to get started but they cannot be expected to give you in depth support on using the packages. We, on the other hand, can. Most of the people whose phone numbers are listed at the back are using the contents of the educational software library on a daily basis. We may have met exactly the problem you have just encountered.

If you are in difficulty, please feel free to ring anybody on the Committee (numbers at the back) and you may also phone Tim Phillips on 0284 706623 (home number).

It is a great help if you are having a problem doing something using your computer if you can be next to it when you phone because it may then be possible to talk you through a solution over the phone.

If your problem is not urgent, or you think it may be difficult to explain over the phone, then do please write to the Editor with your query. I will either reply to you directly or pass your query

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Deadlines for the next issues

RM User 8:4 ..... 12 November 1993
RM User 8:5 ..... 14 January 1994
RM User 8:6 ..... 4 March 1994

The date shown above is the ***latest*** date for copy for the magazine. You will normally receive the magazine about 2-3 weeks after the date shown.

Missing a Magazine?

Back issues of the magazine are available from the editor. Write to RMUG, FREEPOST, London W12 0BR for more details.

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News and Editorial

The UK IT Market analysis for this summer again confirms RM as the largest supplier of computers to education in IT with a share by value of 21%. They are followed by Acorn with 16% and Apple at 13%. No other supplier has over 10% and ICL trail way behind at 1% It's good to read this for a number of reasons. Firstly, it indicates that RM are doing well and a company which is doing well is likely to stay in business to support its users. Secondly, it vindicates my, and your, choice of RM as supplier on the basis that 21% of buyers can't all be wrong (I know it's not really a good argument but safety in numbers always feels comfortable!)

Some of you may have seen an article in The Independent newspaper, criticising RM for the non-standard Nimbus computer and making some rather odd comments generally about the machines. It is true that the original Nimbus (now called the PC186) did not match the IBM standard; it was a much better design but perhaps it shouldn't have been. For over 6 years, however, every RM computer relased has been completely standard in design and capable of running any software that will run on a "real" PC. The X Series, S Series and SystemBase servers all take standard add-on cards (so called ISA or Industry Standard Architecture) and the M-Series use Microchannel cards, just like the high end IBM PS/2 computers among others.

More importantly, however, RM have been a supporter of the Windows standard since its very early days - I remember using Windows version 1 many years ago and RM have shipped Windows with all hard disc machines since the late 80s. Microsoft released Windows 3 in 1990 and it was then that the rest of the world noticed it but RM were there first.

RM recognise that many schools want to run software other than Windows based so continue to support environments like BBC Basic, even on the latest 486 machines by making a small adaptation to the BIOS to allow 186 mode support to be installed.

Much of the above will be known to readers but from time to time you will hear people criticising RM computers for their supposedly non-standard design; I hope the above gives you some ammunition to defend them! The only "non-standard" thing about RM is that they are an independent British computer company which is a success.

I went to the launch of Windows NT in July. It looks impressive but I'm not sure what it will do for most users. It will, I suppose, eventually replace LanManager but not just yet. The one thing that I really noticed was a reference to work that Microsoft had done in Edinburgh "with our partners, Sequent, Digital Equipment and Research Machines" - some of you will know that some of the code used in the development of RM Net LM has found its way back to Microsoft and is seen in NT so it was good to see them acknowledged publicly.

Keeping computers secure in schools is often a problem so I was interested to see some information on

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a range of products which help to do just this. Savtec Computer Technology sell a complete range of products, inlcuding locking kits which will secure a computer to the desk, cable locks which stop the keyboard and mouse from being removed from the computer and disc drive locks which prevent the floppy drive from being used - particularly useful if you are concerned about the risk of viruses being introduced. Prices start from £22.20 for a system to secure a PC which seems very reasonable. For more details contact them on 0420 541370 or write to Oriel Court, Omega Park, Alton, Hampshire, GU34 2YT.

The Co-operative Union organises an annual Computer Studies Residential Weekend at which participants get together for informal discussions about computers and software and can learn from each other. This year's will have taken place by the time you get this magazine but if you want to be sent details of next year's then contact Len Burch at Stanford Hall, Loughborough, Leicestershire, LE12 5QR Tel: 0509 856500.

I've recently been looking at two other 486SX computers; an ICL and a Morgan generic. The ICL costs slightly less than an equivalent RM computer but has a smaller hard drive, DOS5 instead of DOS 6 and a Trident video card instead of the Cirrus (Trident cards are often used on cheape machines because they are cheap; unfortunately they are also rather slow). The RM and ICL computer look quite similar but taking them to pieces suggests that the RM case is made of heavier steel so it should survive being knocked about a bit longer. The other disadvantage is that only RM computers can run PC186 software so if that is important to you you have to buy an RM machine. The first machine that was delivered was faulty and returning it and getting it replaced took nearly 4 weeks so RM are very definitely better there (I've never had a machine fail so quickly from RM but normal repairs seem to only take about a week).

The Morgan computer was cheaper but it had only 2 Mb of memory (it's not going to be used for Windows so this doesn't matter). It came with a cheap looking monitor and a Trident video card. The case is big so if you want to add extra cards it would be easy. For running DOS applications (this one will be dedicated to running library software) it's adequate but it's simply not good enough to run Windows so if that's what you want to do then you need to spend more money.

You may wonder why, in an RM User magazine, I'm writing about other computers. My thinking is that I need to know if RM are still giving a good deal. My little research shows that for normal school use I think that RM is still a good buy but for specific, non-teaching uses, it may be cheaper to buy elsewhere.

RM have now established a company in Germany to serve schools in the region of Nord-Rhine Westphalia and hope to expand to the whole German speaking market over the next few years. RM Net LM has been translated for use (and if you have a copy of WNETDSK then browse through it with something like XTREE or DEBUG and you will find the German text. I don't know how to

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start th program so that its messages appear in German, however.)

Windows on the Past, RM's History Courseware has now been released. It is designed to help deliver Key Stage 3 in Information Technology and History and makes use of Excel, Word and Superbase. The pack includes booklets covering the Civil War, The Great Mortality, Census Information and Charts and Statitics, photo-copiable activity sheets and a staff development module. It costs £99 from RM.

More recent history is covered by Attica's new release; *World War II Archives on CD ROM*. This has been produced in association with the Imperial War Museum. It gives access to a wide range of primary source material, including film, photographs and documents from the Imperial War Museum, over 500 photographs from Hulton Deutsch, more than 2 hours of sound recorcdings from the BBC archives and a selection of government documents, including cabinet papers. It's also possible to look at the more human aspects of the war by studying such things as rationing and the displacement of civilians, for example, the government evacuation programmes. More details from Attica Cybernetics at Unit Two, KingsMeadow, Ferry Hinksey Road, Oxford OX2 0DP Tel: 0865 791346.

Question Mark have been mentioned here before for their test software. This has now been updated to become what they claim is the world's first Windows product for testing and assessment. The original product was very flexible but it wasn't easy to make things look attractive. The move to Windows must make it easier to set up friendly looking tests. The program includes good reporting facilities so that the teacher can analyse students' repsonses. Question Designer is available for £249 until the end of 1993, rising to £349 in 1994. For more details contact Question Mark at 41b Brecknock Road, London N7 0BT tel: 071 284 3999

Colour printing continues to get better although not necessarily cheaper. Canon have recently released a new bubble jet (the BJC 600) which can print on plain paper, has a claimed speed of about 30 seconds per page in graphics mode. The price is about £500 and copies are claimed to cost about 15p for a reasonable amount of colour on the page. It's hard to calculate cost per page because it depends enormously on how much colour is used; a page with something like a simple Excel chart uses much less ink than a full colour Paintbrush picture but at least the printer uses separate cyan, magenta, yellow and black cartridges so you don't end up throwing away a colour cartridge which has lots of yellow and cyan ink simply because it's run out of magenta! Canon (UK) are on 081 773 3173.

You should get this magazine just before the Training Weekend; if so then I look forward to meeting some of you there. If it's later than I expect then I hope you had a good time if you went and I look forward to publishing all the useful information in the next issue (which should be with you early in December).

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Micro-Mart

For Sale:

The following 12 programmes were originally acquired for the M series 286/386 Nimbus running in PC-186 mode.

- LOGO - manual available (offers)
- Write-On - guidance booklet available - simple word processor (offers)
- Sketch - book - simple graphics package (offers)
- Counter - workbook - simple database (offers)
- Clipboard - booklets - information handling program (offers)
- French Correspondence - letter writing - booklet (£8)
- French Adventure Holiday - folder and notes (£10)
- La Calice Magique - French education game -folder and notes (£11)
- Mathemagic Land - arithmetic game - box and information notes (£11)

Free:

- 3 Post Office Programs: Mailflow - letter sorting program, Lenny's Golden Rules - addressing letters, and Moving Targets - program about business goals

Also for IBM:

The Secret of Monkey Island (£11) and Monkey Island 2 (£17)

Call Tony Helm on 0727 843917 evenings or write to: 3, Nelson Ave., St Albans, Herts., AL1 5SE.

For Sale:

5 Accutrak tapes suitable for Irwin streamer as fitted to Net LM servers, 2months old, £125 new £50 or offer

Glenn Taylor Nailsea School Tel 0275 852251 Fax 0275 854512

For Sale:

New, unused, motherboard for M-Series PC386 - suitable for upgrading 286 computer. £100

Contact Lyndon Evans on 0443 690174

For Sale:

Lotus Smart Suite - includes Lotus 1-2-3 for Windows, Ami Pro version 3 word processor and Freelance Graphics. Unopened packs. £150 or offer. Contact Steve Rochford on 081 740 5642 (home), 081 741 1851 (school).

Wanted:

480z with disc drive and monitor plus any technical manuals to give information on programming and interfacing.

Contact: William Barker, Clarach Bay Amusement Arcade, Nr Aberystwyth, Dyfed, SY23 3DT Tel: 0970 828416

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Technical Tips

Stephen Sharrad

Speeding

As mentioned in Technical Tips in RM User 7:1, April 1992, Norton Utilities is a good collection of software for the IBM PC. Most of it will work on a PC186 under SETPC emulation, like the format recover and NU itself, but Norton Disk Doctor won't work at all. However, Norton Speedisk runs very well on a PC186. An alternative to NDD might be PMK, which is a shareware utility program. It won't cope with extremely large drives but it should be in the RMUG library (if it is not, I will put it in there. Steve Rochford has a copy aswell).

Mouse Trouble

The old, large, steel-balled mice supplied with early PC186's are well built and should last for a long time yet. However, many of these mice fail to work after a period and this is because of one of two reasons. Firstly, dust and grime tend to congeal on the mice rotors. This simply causes the ball not to turn the rotors. Secondly, the cable from the mouse to the computer is a 7 core 0.2mm cable. The threads in these cables tend to break after prolonged use, causing an open circuit. The cable (and mostly likely the 9-pin D-way connector) needs replacing. The most common symptom of a cable "season cracking" is that the mouse fails to work on the horizontal direction (i.e. you cannot move the mouse cursor on the screen from left to right) as the left cable is the centre wire in the cable to the computer. This wire is therefore subject to the most stress, as the other wires are simply wrapped around it.

It must be said that the table in the RM Handbook for the mouse port is in fact quite correct (unlike stated in the last issue...whoops!). Mice do not use the ground or select connections at all, whereas a joystick (I've never seen one on a PC186, but I'm assured that it is possible) might.

Complete Blowout

Later 84-key models of the PC186 have two fuse-slots at the back, whereas earlier models have only one fuse-slot. I've seen several PC186 power supplies that have been "written off" simply because they didn't work. The problem? There is a second fuse on the early power supplies; however, it is inside the PSU and concealed pretty well. RM cannot be blamed for this, the power supply boards were in fact made by Microvitec. The second fuse is an antisurge 0.8A 20mm quickblow. It is hidden near the fan but under some cable connections. Getting to it is pretty difficult but this fuse is normally the first to blow. I must say that it is best to leave any servicing of powerpacks to qualified personnel - I hardly need say that mains voltage is not healthy.

Adaptable

Most of the PC186 external 60MB drives use the Seagate 277R-1, which is an RLL (Run-Length-Limited) drive but also connected is an Adaptec 4070 SCSI (Small Computer System Interface) to RLL adapter. This interface costs, from RM, around £320.

However, second-hand Seagate 277R-1's can be brought for as little as £50. There is nothing to stop you buying a second drive and mounting in on the bottom of the case (drilling a

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few holes in the bottom for ventilation) and connecting two drives to one interface. First, remove the old (or first drive) from the interface, and connect the second drive up indetically to how the first one was. Put the SIP terminating resistor on the new drive. Then check that this drive works. You may need to DOS format it which is strightforward. You may, however, need to low-level format it. This can be done by RM and a number of other places. The new drive can only be low-level formatted when the old drive is NOT present. Two drives at once may cause low-level format failure or both drives may be low-level formatted. Then you can put the old drive back as it was (by removing the new drive). However, leave the SIP on the new drive. Connect the old drive with its cables to the interface. The command cable (the smaller cable) should be connected to J0. The data cable should then be enlarged or replaced to form a data bus, with one connector for the interface and one each for the drives (so 3 in total). Connect the new drives data cable (you may have to buy or make up a new one of these) to J1. Then connect the data cable up between all three items. Make then second drive active by moving the bird-link at the back to set the address to drive 1 (as the old drive is drive 0).

You therefore have a 120MB external unit (in the form of two 60MB partitions), which is really all the space a PC186 user can ever wish for...well, I'm still short of space!

Conner

The Conner CP3040 40MB SCSI drive, as used in the newest 102-key PC186's, can only be low-level formatted by the 102-key system. However, I have been reliably informed (by RM!) that this drive can be low-level formatted and then fitted to an 84-key system, for DOS formatting and booting. I am about to try this little trick out, and I hope to confirm this in the next edition of Tech Tips after next half-term.

Buffered Up

There aren't that many things to go wrong with a PC186; except perhaps the odd EEPROM failure, the few on/off switches which break and the machine remains on or the couple of fans here and there which stop blowing (causing the power supply to melt. Most of these faults are peripheral to the Nimbus mainboard and are more fittingly described as external faults. The EEPROM (Electrically Eraseable Programmable Read Only Memory) is the exception. This fault is bound to happen any way, as all EEPROMS have a limited life expectancy, and the very way they work means sooner or later they will fail. However, the PC186 will still work without an EEPROM (a message at turn on would say to the effect that the EEPROM has failed, and if you press any key then the machine will use default settings). The EEPROM is the non-volatile memory (which is retained even after power-off) containing all of the system settings, like colours and drive settings. The default settings are good enough, but if you want, the EEPROM is easily repaired or replaced.

The only other common fault on the PC186 is not an expected one, but is reasonably common one. Unlike most other faults, this fault resides on the Nimbus mainboard.

The PC186 supplies an RGB signal

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with separate synchronization controls (frame and line synchronization). (Or separate synchronization with composite video if you are using the mono output). However, many have turned on their PC186 one day to find that the colours on-screen have all changed and most colours are missing. This is because the PC186 is no-longer outputting one of the three colours, red, green or blue. You can either use the mono socket (if you have a suitable monitor - the mono socket will still supply a colour signal) or you can replace the naughty chip on the mainboard. The chip is in position IC10, and it is a 74LS240N, an octal buffer chip. The chip will need replacing. It is available from Maplin and other such places. If you are unsure of what you are doing then it may be best to send your machine off to RM - whenever you do home electronics you are always taking a risk. Heat spreading along the copper tracks of the circuit board from your soldering iron may be enough to make your machine useless. If the machine is still in guarantee (which most aren't) then send it back to RM. RM are most helpful when it comes to problems. If you are not under guarantee you will of course be charged. However, if you decide to do it yourself, here's what to do:

1 Try to work in static-free surroundings. Occasionally tap your hand on something metal which is grounded - this will remove any static charge from your person.
2 Completely disassemble your machine. Remove any option cards, RAM boards, disk drives and power supply.
3 Remove the mainboard. It may be screwed in or it may be clipped in.
4 De-solder with iron and sucker the pins of IC10. It may make things easier if you cut out the top of the chip first. Remove all traces off the old metal pins.
5 Insert a 20-pin IC socket (you may have to use several small ones to get the required size). Solder the socket in.
6 Insert into the socket a replacement chip. Make sure it is a 20-pin 74LS240N. (Maplin code YF87U). Insert the chip so that the little notch on one side is on the same side and faces the I/O bus connector.
7 Re-assemble the machine. The colour output should now work.

I have performed such an operation on my machine. I took the buffer chip from an old 380z board made back in 1979. Who said the 380z was useless?

That's it for Tech Tips this time. If you have any queries or problems regarding any RM machine please do not hesitate to contact me. My address and phone number is in the back.

The first PC186 was shown at BETT's predecessor at the Barbican in January 1985 so some of the early machines are approaching their 8th birthday! It's a tribute to RM's quality that the faults they show tend to be relatively minor. If you are happy taking computers to pieces then the above tips may help but remember there are lethal voltages inside the power supply and computers can be easily damaged by static electricity; if you're not sure what you are doing it's far better to pay a qualified service engineer than risk killing yourself or the computer.

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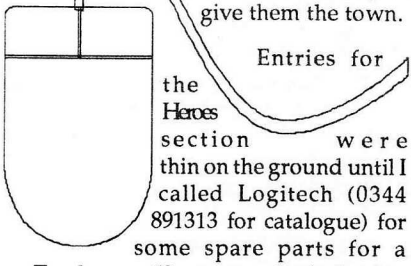
Shop Talk

David Palmer

I have a theory that as my file server is getting bigger and bigger and more complex, so it is becoming more sentient. One manifestation of this is that it doesn't like me to leave the room! If I have a cover to do for someone who is away, it often manufactures a little crisis to keep me from leaving. (I have tried to explain to the deputy head that this is why I am often late for covers!) I have been aware for a long time that all electronic machines can recognise individual humans. This generally works over a limited range of about a metre. I call this the "Zone of Proximity". More times than I can count I have been called to a non-functioning machine which starts to behave when I am about a metre away. "How do you do that?", people ask. I think the answer is that the machine knows that I know that I will not accept its behaviour and will turn it off if I can't cure it. I would be very interested in collating similar stories if you send them to me care of RMuser.

The Lego Dacta control kit has arrived and it is great fun. Having said that I have a long list of things that I wish it **would** do but it doesn't do yet. Please contact me if you want to know more. I will write more for the next issue and I hope that Lego will accept our invitation to display at the training weekend

In my Heroes and Villains file CPC have changed from heroes to villains. They have a vicious small order transport charge. It is hidden in the small print at the back of the catalogue. The people who take your order do not tell you that the charge will be applied. Once I knew about it I thought I could avoid it (orders over £25 are not charged). I carefully stored my needs until I was over the limit but it was dispatched in two installments and one of them was under £25 so I was charged. I kicked and screamed and was told that I could ignore the extra bill - until this week when I got a threatening letter. Also in the villains file this week are Epson. (Move over Kodak). I have an EPL4100 laser printer and would have recommended it to anyone looking for a printer. It is cheap, fast, makes good prints and has a sensible control which lets you turn down the amount of toner you use. Microsoft do not supply a driver for it so I got one from Epson - no problem. However I called them recently because I wanted to print a page at 50% scale. "No our driver can't do that and since we have stopped making that model, we will not be making a new driver so that's that." Supporting last year's machine is a good PR move - abandoning it is not and I will think twice about buying Epson again. I am also going to put BT in the villains section because although they invest in loads of hightech gear, they still can't find a number unless you give them the town.



Entries for the Heroes section were thin on the ground until I called Logitech (0344 891313 for catalogue) for some spare parts for a Trackman. "Sorry, we don't do that model any more" said the man. My

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heart sank. "But I could send you a whole one and you can swap the bits you want and send it back to me". Now that is how to become an instant hero in my book! Also included is Colin Jack at Oxford Mathematical Designs, 131 High St, Oxford, creator of the program 3 Dee World Builder, who followed up a request for help well past the line of duty.

CPC are still in my good books but I can appreciate David's comments about the invidious way in which delivery charges are sometimes levied. If I place a single order I don't see why I shoudl have to pay twice for carriage just because the company doesn't have an item in stock. Action Computers (0800 333 333) are heroes in this context; they have a flat delivery charge of about £5 and if they are out of stock then you still only pay one charge. They are also ***very*** *quick; a telephone order before about 5pm will give next day delivery and if you are close to one of their depots you can have same day delivery for little more money.*

RM charge a flat 1% of order for carriage (with a £2 minimum) which seems reasonable; many carriers charge by the box and have typical charges of about £8-£15 per box so a monitor and computer would cost a lot more than the £10 or so which RM will charge.

Printer drivers are insignificant pieces of software until they go wrong or you can't get them! We have a Ricoh LP1200 in our school office which I chose a year ago having read many reviews and seeing it at an exhibition. The price was reasonable and it seemed to work well when we got it. It came with a promise of a driver to allow text to be printed at 400dpi which then seemed superb. Adverts for the printer now show that it includes a "free" driver to do just this so I phoned the dealer to ask how much it would cost to get the disc. I expected to pay perhaps £5 to cover postage and handling but instead I was told that it cost £25 plus postage and VAT (and I didn't dare ask how much that was!) so Silica Systems go in my bad books! Ricoh, however, are heroes; a phone call to them sorted out why the paper was creasing in the printer and got a driver sent to me the next day. Well done Ricoh. (Incidentally, this magazine is printed on a Ricoh 6000PS laser. If you have access to the CorelDraw 3 CR ROM then LASER09 in the clipart is a picture of such a printer!)

I've also found Logitech to be very helpful in the past but if you look after your mouse you may never need to contact them! Keep your mouse clean but don't use alcohol on any of the rubber parts; it makes them perish. Do use a mouse pad and keep the pad clean, washing it if necessary

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Software Spotlight - PC Tools for Windows v1.0

Simon Gosney

When I replaced Program Manager with Norton Desktop for Windows (NDW), I could not imagine how another third-party shell could improve upon it. When I received a copy of PC Tools for Windows (PCTW), however, my first action was to uninstall NDW and install PCTW in its place.

The PCTW installation routine is clear and easy to use. As well as the shell element, bundled with PCTW are Central Point Backup and Central Point AntiVirus, the latter being the full version of the product that Microsoft bundle with MS-DOS 6. In addition to these major products, there are numerous other utilities, including MultiDesk, File Manager, SmartFind, DiskFix, Undelete, Scheduler, System Consultant, Optimizer and ScriptTools.

Program Manager Replacement

The shell is probably the major feature of PCTW. It works in a Mac-like way, replacing ProgMan's groups with folders. These folders can be nested so that, for example, an applications folder could contain a WinApps folder and a DosApps folder, as well as separate files. Programs, or data files that have associated formats, can be dragged from either Windows' or PCTW's File Manager to the desktop or into a group, facilitating the creation of files within folders.

MultiDesk is an integral part of the PCTW shell that provides "virtual desktops". Instead of arranging the screens in a grid like some shareware programs, MultiDesk uses a cardfile-like philosophy: when you select a desktop, it moves to the top of the card stack. PCTW comes with three desktops set up, but up to eighteen can be created.

File Manager Replacement

The File Manager is a great improvement on both the NDW and Windows file managers. It features 80 file filters, so that most data files (and some program files, such as DLLs) can be viewed without the native application being loaded. The File Manager also features file encryption and PKZip-compatible compression and decompression. Drag 'n' drop is used extensively, for instance to backup a drive, simply drag the drive icon on to the backup icon.

Most modern applications make use of the right mouse button, and PCTW is no exception. Clicking the right button brings up a context-sensitive menu appropriate for the window over which the cursor was positioned. For example, clicking the right button over the drives window brings up a menu with disk-orientated commands such as Format, Disk Copy, etc.

PCTW is extremely customisable. It is possible to set up a toolbar using either icons, captions or both, on any window, e.g. the main shell window, the File Manager window or a folder window. It is also possible to customise any menu structure on any window. It is even possible to create additional Control Panel applets.

On the Main desktop is a folder called Quick Launch, and any files that you place in that folder will automatically be placed on an

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additional menu on the system menu called Quick Launch. This submenu appears on all system menus in Windows, therefore allowing quick access to commonly used utilities.

When you install PCTW, you are asked whether or not you wish to create an Emergency Disk. If you decide to proceed with the creation, all your start-up files, including device drivers, are copied to a floppy, which is also equipped with a copy of your CMOS information, and DOS versions of AntiVirus, Restore (for backup), DiskFix, Undelete and Unformat. This disk is designed to be used for booting from in the event of hard-disk failure, and it could be a life-saver!

Unlike NDW's (and everyone else's) equivalents, PCTW's Optimizer and DiskFix programs work in Windows itself, and are not restricted to DOS operation. Optimizer can be configured to run in the background, so when the processor is idle, the hard disk is optimized. DiskFix can correct common logical problems on floppy and hard disks, even in Windows.

The Central Point System Consultant gives a complete set of statistics on your computer, including the hardware, the DOS and Windows. There are 400 different reports that can be accessed on system and network parameters, each of which can be selected for output to the printer.

I have been using PC Tools for Windows for about three weeks, and I am still discovering new features of interest. The level of customisation is fantastic, the interface intuitive, the manual readable and the price reasonable. It is designed for network as well as single-user use, and includes features that are difficult to implement under RM Net LM in its standard form. The only negative point that I have found is the large amount of disk space required: up to 14Mb for a full installation, and 10Mb for a minimum "laptop" installation. However, I think it is 14Mb well used, and if you are in the market for a new shell, coupled with a wonderful set of utilities, look no further that PC Tools for Windows.

Information Centre:

PC Tools for Windows v1.0

Central Point Software

Tel: 081 848 1414

RRP: £139 (ex. VAT)

---

*Do **you** use a piece of software which you really like? Please write and let me know. You don't need to be very technical - just tell us why you like it or even why you don't like it! For example, I've written before now about XTree Gold and it's still my favourite file management program. Sadly, it can't cope with the 17,000+ files in my user directories on the network so I decided to take advantage of the special offer on moving to XTree for Windows. Version 1 came and crashed; version 1.5 was supposed to be better so I upgraded to that and that crashes just as often. It's a pig of a piece of software (by default, to delete one file takes three mouse clicks and about 10-20 seconds while the screen is updated after the deletion!) It too has file viewers but it can take 5 minutes to load a simple bitmap! Is anyone out there happy with it? If so, why and what am I doing wrong?*

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Kodak Photo CD- A Few Steps Forward?

Phillip Fox

We are all used to hearing about Kodak Photo-CD and the High Street stores, such as Boots and Dixons, are now offering a service to put your holiday snaps on CD-ROM. What is Photo CD and what does the future hold?

Currently Photo CD offers the opportunity for approximately one hundred 35mm images to be held on a CDROM. Imagine this in a school and one hundred shots are soon used up:

75 staff;

15 general school shots;

5 activities;

1 school logo;

1 map;

1 address;

1 contacts list;

1 menu screen.

As you can see the one hundred available spaces are soon filled. Why is this? Well the reason is that Photo CD holds not one copy of the image but five, taking about 4.5Mb per picture. These five copies are called resolutions and the table below shows what resolutions are used in the original Photo CD format.

The Base/4 and Base X 16 images are compressed and so lose some detail, but this is not noticeable.

This format is called **Photo CD Master.**

This format is fine if you work with 35mm film but what if you use a more professional format such as 120mm or 5x4"? There is now a format called **Pro Photo CD Master** available which allows twenty five images to be stored. This reduced number is because of the inclusion of another resolution, that of 4096 lines by 6144 pixels (Base X 64).

Now we are beginning to encounter some of the problems that Kodak have been addressing since the launch of Photo CD, the desire for more images on one disc.

Kodak CD Portfolio

This format allows images from Master Photo CD discs or other electronic digital formats such as TIFF to be combined with graphics and audio in a branched environment. As this format only holds the three lower resolution images (Base/16, Base/4 and Base), this disc can store up to 800 images or 72 minutes of CD quality audio or a combination of the two.

However what if this is still not enough?

This leads us to the **Photo CD Catalog,** a format which holds only the thumbnail images allowing up to 6,000 images to be held on one disc. This format is not due for release until 1994 but could be useful in applications where access to a large number of images is required.

And if you are still not satisfied...

Kodak are producing the **Kodak Professional Photo CD Image Library System** a big name for what is an incredibly powerful system. This employs a jukebox capable of holding

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100 Photo CD discs in any combination of the five formats discussed above.

For the numercially minded that gives the following capacities:

2,500 **Kodak Pro Photo CD Master** images;

10,000 **Kodak Photo CD Master** images;

80,000 **Kodak Photo CD Portfolio** images;

600,000 **Kodak Photo CD Catalog** images.

All this and much more.

If you are still not convinced that Photo CDs are going to play an ever increasingly important part in education in the future, Kodak are busy preparing hardware and software to allow the seamless integration of all the above formats with other information. This will allow users to create their own applications with the minimum of effort.

For further details contact Kodak Limited at PO Box 66, Hemel Hempstead. Herts HP1 1JU.

All trademarks and copyright are acknowledged in this article.

I like the idea of Photo-CD, and with Kodak behind it I'm sure it will be a success, but I'm still not sure how it will be used. I've seen other systems which are supposed to make it easier to create multi-media applications but they simply require too much work to be viable. I'm going to wait and see!

Curves of Pursuit *or* A Solution Looking for a Problem

Glenn Taylor

Some time ago I came up with the idea that it should be possible to use RM Logo for producing curves of pursuit in a way which may (with a following wind) be vaguely useful in maths lessons. I was eventually able to produce suitable routines for modelling such curves and these results may be of interest to other readers - although as I never got round to using them in a maths lesson, their usefulness is unclear and untested! Anyway, here goes...although if you have something better to do, I'd recommend that you do it.....

If you are unfamiliar with the notion of a curve of pursuit then imagine that you are at a suitable vantage point looking down at a man being chased by a dog. The man is following a certain path (probably a straight line towards a convenient doorway) whilst the dog is continually adjusting its direction so that it always heads for the man. The path taken by the dog is called a *curve of pursuit* and these form part of an area of maths under the general heading of *locus* or *loci*.

In the following implementation of this situation the man can "run" along any predetermined path whilst the chasing dog (or dogs!) can be "programmed" to start anywhere on the screen. All this is effected using the procedures given below and the general sequence of events to be followed is:

- decide upon the path to be taken by the man,
- decide which dogs are to chase him,
- place the dogs at their starting positions,
- set the chase in motion.

1. Specifying the Man's Path

This is done by building a procedure to draw the required path. Within this procedure you **must** use the command `FWD` (defined below) to draw a line and **not** `FORWARD`, `BACKWARD` and their shortened forms. As an example a square path of side length 80 could be defined by typing `BUILD 'SQUARE` and then entering:

```
REPEAT 4 [ FWD 80 RT 90 ]
```

2. Choosing Dogs

Up to seven dogs can be defined and these are numbered 2 to 8 to match the number of the turtle used to represent the dog. Their paths are drawn in a corresponding pen colour whilst the man is always represented by turtle number 1 and drawn in white. A logo list variable called `DOGLIST` contains a list of the currently "active" dogs and this can be changed by issuing a `USEDOGS` instruction. For example if you want the man to be chased by dogs number 3, 4 and 8 then you issue the instruction:

```
USEDOGS [ 3 4 8 ]
```

(Note the square brackets and absence of commas)

3. Placing Dogs

The PLACE command is used to define the initial position of a dog. The dog is positioned to face north and will turn to chase the man once the system is set in motion. The syntax for this instruction is:

```
PLACE  n  [ x y ]
```

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where

n = dog number

x = x - co-ordinate

y = y - co-ordinate

For example:

`PLACE 3 [-50 60]` will position dog 3 at co-ordinates (-50,60)

4. Starting the system

Once you have defined and positioned the dogs you issue the instruction defined in step 1 above and everything else is automatic!

Procedures Used

The following procedures define the instructions given above and are each created using the BUILD instruction. The additional procedure TRACK is needed for internal use by the FWD procedure. The syntax of these definitions is not for the faint-hearted! Watch the spaces (and lack of)!

Procedure Definition

```
FWD 'n
        repeat :n [fd 1 make 'p
        pos track]

PLACE 'd 'xy
        tell :d setpc 16-:d setpos
        :xy seth 0 tell 1

TRACK
        make 'loop count :doglist
        make 'i 1

        repeat  :loop  [tell
        :doglist # :i seth last
        towards :p

        fd 1 make 'i :i+1 tell 1]

USEDOGS
'dl     make 'doglist :dl
```

Note that although the TRACK *procedure can be spread over several lines, the instructions within the square brackets must be on the same line and not as set out above.*

Using a Text Editor

Having to type in the above definitions each time they are needed is rather a disincentive and so this may be an opportune moment to explain how to save them in a text file.

Before running LOGO, load a text editor (or any word-processor which will save a file in plain text) and then enter the procedures using the following syntax:

```
define [ [procedure header]
[procedure definition] ]
```

For example the FWD procedure would be defined in such a text file by the line:

```
define [  [fwd 'n]  [repeat :n
 [fd 1 make 'p pos track] ]  ]
```

It is also possible to put comments in such a file provided that you preface them with a semi-colon. Once you have entered all the definitions and saved the file (eg. with filename PURSUIT) you can use them within LOGO by entering the command:

```
CONSULT 'PURSUIT
```

This makes the procedures available and also activates any direct commands placed in the file. My file contains the instruction `USEDOGS [8]` so that one dog is always defined by default.

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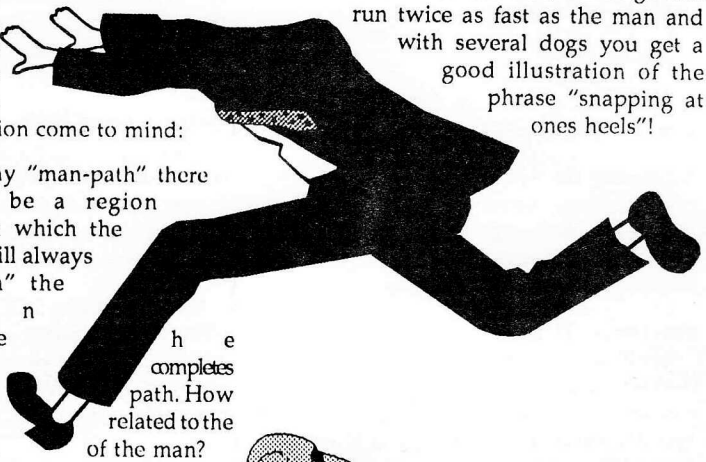
Now What?

That's just it: I'm not sure. The time taken to work out the intricacies of the TRACK procedure meant that I'd finished teaching the topic by the time I was successful. Nevertheless some possibilities for investigation come to mind:



- For any "man-path" there must be a region within which the dog will always "catch" the man before he completes his path. How is this related to the path of the man?
- Is there a connexion between the largest (square?) circuit which can be completed by the man and the starting position (x,y) of one pursuing dog.
- Is it the initially nearest dog which first catches the man? If not, can the successful one be predicted?

Do let me know if you make anything of this.

Footnote:

If you change FD 1 to FD 2 in the definition of TRACK, the dogs will run twice as fast as the man and with several dogs you get a good illustration of the phrase "snapping at ones heels"!

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Orbits - Voyage through the Solar System. (National Curriculum Key Stage 3/4 Science). 3-D graphics demonstrate the marvel of our Solar System. Animated sequences show the effects of gravity on various planets, simulation of eclipses, tides, phases of the moon etc. etc. Detailed data on Sun / planets structure and characteristics. only £34.95 (leaflet available)

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Letters to the Editor

The RM InSite technical support bulletin (issue 2) contains a small error. To change the wallpaper for all stations needs a section in u:\w30\rmwin\windows\default.wni as follows:

```
[Desktop]
WallPaper=filename.bmp
NB. not [Windows]
```

If you add `TileWallPaper=0` the bitmap is centred. You may fear that putting a bitmap on 186s will reduce the available memory or increase the Windows start-up time. If you edit u:\w30\rmwin\rmwna\186.rmi as follows:

```
[RMExt.WIN.Desktop]
WallPaper=
```

this overrides the setting in default.wni so that 186s do not get the wallpaper but all other computers do. I am using the school logo as a wallpaper but I am also going to experiment with using the wallpaper to present messages to users.

Changing the subject completely, I think many readers of RM User will be interested to know that there is a Windows version of Logo freely available in the public domain. It is by Brian Harvey and George Mills and can be downloaded from Compuserve's Logo Forum. MSWL34.ZIP is the main file, MSWL34.TXT contains the release notes and MSWE34.ZIP has a patch which gets it working under Windows 3.0. These filenames might change slightly as the software is still under development. It needs at least standard mode so won't work on 186s. As you would expect with a Windows version you can load and save Paintbrush bitmaps, typing help invokes Windows Help, and so on.

The syntax is quite close to RM Logo.

Mark Burch

Mullion School

CIS 10023,1471

Dear Steve

Following my retirement from Aerodynamic Research at British Aerospace I have been helping Newton Bluecoat Primary School, Nr Preston, with their computing.

The school is now totally Nimbus based but we do have some compatibility problems, eg some of our useful BBC BASIC Maths and Adventure programs do not run on the 386 Window Box as presently configured. We are keen to learn of other schools successful computer initiatives in Primary and other experience that would help us make best use of our equipment and teacher time.

K Ian Evans

10 Ribby Avenue, Wrea Green, PRESTON, PR4 2ND Tel: 0772 685951

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Using Word for Windows to produce a 3 Column Leaflet

Maureen Wernham

I have just become membership secretary of this user group and when Stephen handed over all the files to me he suggested that the leaflet given to people interested in joining our group needed re-writing. As this was a 3 column double sided leaflet I knew I had to come to grips with using Word as a DTP program. The setting up of the columns was no problem as I had attended the Word course at last year's Training weekend but no-one had said how to go from one column to the next. I saw the option of Break in the Insert menu and thought this sounded hopeful. I was lucky I had hit the correct option first time! I can hear some of you saying why didn't I use the manual to help me? I expect there are many of you who like me find the manuals so bulky that it is easier to try things out on the screen instead!

Having overcome this problem I found the ordinary word processing and bullets caused no real worries. Then I came to trying to produce small boxes for applicants to tick. I knew there were rectangles that could be produced by inserting a frame and I discovered that the Format options allowed me to define whether the frame would show or not. I then started to line up these rectangles making them the same size and in line. After much cursing and a great deal of eye strain I succeeded - more or less! Then I decided to try printing the page. I had set the page margins and size but not at the very beginning of my work. This was a fatal mistake as I discovered that parts of words disappeared off the edges. Well, I thought, if I change the margins it should all fit in. Surprise, surprise it did not cure the problem it just sent all my carefully arranged boxes around the page! I could not face starting the whole page again and luckily, like a good computer user, I had been saving it at the various stages. I closed down the ruined version and opened up the previously saved one. I thought the best thing would be to just truncate the lines that were too long by manually forcing new lines at the appropriate places and carry on with the printing. Then that dreaded message appeared - Error in format, section one does not fit within the margins, continue? - or some such wording! Well I continued and it did print properly. I still do not know what I did to cause this margin problem in the first place except by altering the page set-up in the middle.

Well, was I pleased with my first effort? No, not really as the boxes did not look quite right. What should I do then? Try moving the frames again. As this was a lengthy task and not easy especially on the eyesight I left it alone. At the next committee meeting I asked Stephen's opinion and he suggested I should use a table to produce these boxes. I then looked them up in the manual and discovered how easy they were to use and they could be defined in whatever size one wanted. I redid that page of the leaflet and it is certainly looking better now.

Now to the other side. First adjust the page for my set-up. One column required the Freepost address to be printed but vertically not horizontally. What to do? Luckily I remembered having seen the option to turn words into this position when we were

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producing a Logo at last year's course. But what part of Word produces this was my next question. I found my notes and discovered I needed to insert an object. This then gave me a list of programs I could use and luckily I had noted down which one was required. This went well and the address duly arrived in the correct position on the page. The middle column requires the RMUG logo and, although I had a try at producing it, I gave up and I am awaiting a copy from Stephen, hopefully in the correct orientation. If not the leaflet will not be ready for the Training Weekend!

Was it worth the effort? Yes definitely, it made me learn more about Word. I think one needs a definite task to make one find out more about a program such as this.

Word for Windows is an amazing program; I really like using it and I have thought several times about using it for the magazine (instead of PageMaker) - see my article on PageMaker to find out why I don't.

As Maureen says, you really need to have a job to do in order to really find out what the program can do; it's really difficult to just sit down and say "Today I am going to learn to use Word".

If you have used one of the common programs to do something you're proud of then write and let me know; I think it helps other users to see what sort of thing can be done - 12 months ago I would have said you couldn't do something like this leaflet with a word processor but now I know that you can so I am inspired to try more complicated things!

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Micro-Mart

For Sale:

The following PC186 components and equipment are available for next-to-nothing due to spring clean and upgrades; please help me empty my overcrowded cupboards!

- 0.5Mb add on RAM board (with sockets to allow upgrading to 1MB) £20
- Floppy disc controller £12
- CT20 Tape backup unit controller card (requires slot in PC186)
- Cumana SCSI interface card (requires software from Cumana) £12
- Full height 3.5" floppy disc drive (dark gray £10
- 4 way PC186 I/O bus cables £2 each
- Utility board/Serial Piconet batteries (SR44) £1.50 each

Also available (Great collector's items!)

- fully populated 192k add on RAM card
- 1.31A firmware chips (for 84 key computer)

All the above are fully working. Please add £2.50 for postage and packing per order. For details on the above or any more parts that I may have, please contact Stephen Sharrad on 0491 577149 or write to 10 Gainsborough Hill, Henley-on-Thames, Oxfordshire, RG9 1ST

Wanted:

- Any software for PC186 including PageMaker 3 and CorelDraw! 2 Anything considered.
- Any broken or unwanted PC186 parts. I can find them a good home! Anything considered.

Please contact Stephen Sharrad on 0491 577149.

For Sale:

- Tape Streamer interface board for an AX server with SYTOS (V3.3) software, cable and manual. Was RM part 022 697 This was bought but not required last year and has never been used. Original cost over £200. Offers around £100.
- Chain 16 Server (380z) and 16 480z computers with silicon discs. 6 mono monitors and 2 other monitors that have never been connected to the 480z's. Loads of software. Offers around £500. Some colour monitors may be available.
- A 380Z computer complete with monitor, software and a microline serial printer. Offers!!
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Please phone for details to Phil Dowie at Sutton High School, Sutton on 081 642 0594 or Maureen Wernham on 081 398 1948.

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PageMaker 5 - Do you need it?

Steve Rochford

If you are using PageMaker on a network supplied by RM then you are probably using version 3; this has been around since the late 80s (it predates Windows 3 but version 3.01 was released just after Windows 3 to allow the two to work together properly) and works perfectly well. In this article I'll try and explain what features version 5 has that might persuade you that you need to move or convince you that you can save a lot of money by staying put.

This magazine was produced using PageMaker 5 following a rapid upgrade from version 3 to 4 and I've begun to get a good feel for what the program does. When you first start it you'll get a screen that will be immediately familiar and although the menus have changed a bit it's not too difficult to find things. The most noticeable thing is speed; PageMaker 3 feels much faster.

A useful new addition is the control palette; this allows you to pick things like font and size directly from a palette which floats on screen and it works quite well. It can be a bit confusing - it lets you choose the leading (the space between lines of text) as Auto, which is what I normally use, but then enters a number into the box. If you choose Auto in the normal Type menu then the box tells you you've chosen Auto rather than an exact number. The list of fonts is handled much more sensibly from the control palette than from the Type menu; the former gives a box similar to that in Word and many other programs showing a few names and allowing you to scroll to the others, the latter gives one or more long columns of fonts, covering most of the screen if you have many fonts installed.

A completely new feature is the ability to rotate text and graphics freely. I don't often want to do this but the lack of the facility is really annoying if you do want it. If you have a decent drawing program then you can probably rotate the graphics before you import them to PageMaker so it may not matter.

PageMaker 4 introduced a story editor so that you can more easily edit stories without having to wait for the page to redraw if you have a complex layout. This also includes a spell checker (but no thesaurus) and search and replace utilities. It's not bad but it's not Word. I don't like the spell checker; it works but I find the way I have to click continue all the time is really irritating. If PageMaker 3 had a filter which could read Word for Windows files then that would be perfect; PageMaker 5 can do this so I don't often use the story editor.

One of the areas which I imagine Aldus hope will grow is that of Aldus Additions; this allows third parties to add features to the program. One of these allows you to group objects on the page so that they move together (For example, the membership form has always been a nightmare to change because each box is separate; if I have to move anything then it all falls to pieces so I never change it!) Unfortunately the group facility may not be of use to many people because it generates a PostScript object which I understand won't print if you don't have a PostScript printer.

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The magazine goes to the printer as "camera ready copy" - I give him pages which look exactly like the ones you are reading so, for example, pages 26 and 19 are printed on the left and right of a sheet of A4 paper. PageMaker 5 takes care of building a booklet automatically like this. Earlier versions did not which meant that I worked with A4 landscape pages 4 columns wide. If I wanted to move an article somewhere else in the magazine it wasn't just a case of deleting the pages and inserting new pages (because that also takes out the articles on the other half of the page) but became a major exercise in shuffling things around on the pasteboard (if you've never seen it, press Shift Control W to zoom out and see the whole board. Working like this means it's quite impossible to read the text but easy to shuffle columns of text from one page to another).

The build booklet feature was the one that particularly attracted me to the program; it's implemented as an addition. It's amazing to watch it work; it opens a copy of your publication and then makes a new publication by copying pages from the A5 sized portrait pages to the A4 landscape pages, including doing things like "typing" the footers in the right place. It's able to do all this because, at last, PageMaker supports multiple open documents. There are many occasions on which I have wanted to transfer something from one publication to another and been stuck because you can only copy one object to the clipboard so if you have a lot to move you open a publication, copy an item, close the publication, open the second one, paste, save, close, open, copy, close, open, paste .... very tedious.

Drop Caps look quite good and are quite fiddly to achieve manually ; they are directly available as and addition. Another addition is Bullets (look at Micro Mart to see it in action). It's not hard to do bullets by hand but it's easier to get the program to do it for you.

The contents page in this issue was generated using the Table of Contents facility. This is easy to use (it just picks up items having a specific style) and is quite helpful (more than once the magazine has been almost ready to print and I've realised that the contents page is totally wrong; like this it should be easy to make sure that it is correct) It's also possible to index the text and I hope to publish a full index to this volume in due course which I hope will be more accurate than the one in the manual - I only looked up two things while I was writing this and neither was on the page given in the index!

The Help system is better than it was; it now uses a proper Windows Help file and it seems fairly comprehensive but there are always going to be occasions on which you will need the manual.

In summary, PageMaker 5 is a pretty good package but it probably represents overkill for most teaching use; you will rarely need to use some of its facilities and as a learning experience it may be better to do things the long way round so that you can find out what's going on. I don't think I'll be in any hurry to buy it for use in my school (even if I could afford it!)

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If it ain't broke don't fix it!

Neil Stanley

For a long while I have been convinced of the potential of CD-ROM. Having seen the increase in use by the undergraduate students where I work and the introduction of Photo-CD it had made me realise that access to this technology at home could be very useful for my small son (now aged six).

I'd studied the market and realised that the recently introduced Mitsumi LU0055 drive seemed to fit the home user's needs in both performance and budget; but would I ever be brave enough to open up my RM S series 486/33. Not that I am unfamiliar with the insides of computers, I've stuck many a chip in a BBC 'B'.

An opportunity at an exhibition provided the impetus. UNICA from Stockport (061 429 0241) were there and had reduced the price of the drive. That and the lack of the delivery charge meant I was sorely tempted. I had a long chat with the 'salesman' about how easy it would be to fit ("So easy even my brother can do it!"). But I still wasn't quite convinced, especially regarding how it would be physically held in and the power connectors. I could have rung technical support at RM, but not from the show. So I wandered off and was entertained about the wonderful features in several new packages including WordPerfect 5.2 for Windows.

In the end I succumbed and the purchase was completed (together with a single CD to try on it - I hoped). Clutching my goodies I went home. Once there I dug out my User's Handbook - opening up seemed easy enough, just five screws (unlike the original metal cased 480Zs!). I read the drive installation notes from Mitsumi (all that stuff about channels, DMA, etc.) and located June 1993's edition of Windows Magazine which includes a feature on CD-ROM.

After backing up the only two files I considered important (and unreconstructable) - our cheque book accounts in Excel - my wife and I proceeded with the upgrade. Off went the power, out came all the leads, the monitor and keyboard were moved out of the way and then the five screws removed. Inside wasn't empty but it wasn't crowded either and there were at least 4 power connectors free.

The spare drive bay front just popped out and the drive slid in with a slight pressure. Equally easy was the installation of the controller card (all our slots were free). Then we fixed on the cables, remembering to go under the support bar (this was a bit awkward). Now the drive could be fixed, two of the supplied screws fitted in the RM supplied harness and it felt pretty solid.

At last the lid could go back and all the outside cables be reconnected. As we powered up the drive light flashed (a good sign?). Then we ran the utilities disk, accepting all the defaults, moved the drive line above the windows command in AUTOEXEC.BAT (as advised by the program) and rebooted.

It worked - Windows file manager now had a drive D (the icon looks as if its tongue is sticking out!) and the test disk I bought functioned well. The whole process took about 20 minutes.

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The greatest help? The magazine article of course. The 'Haynes manual' style series of photographs really boosted my confidence once I'd seen the inside of my 486.

Since then I've been running the Mammals Disk (from National Geographic) with my son, which he thinks is great, although we do need some amplified speakers to get the best of the sound. You may need to add the mouse driver line to CONFIG.SYS (that information is hidden in a manual).

What next? Well, if the pocket money will run to it I'd like an encyclopaedia and a few reference books on disk (especially quotations), but I think the OED at £495 will have to wait!

Neil Stanley lectures in Educational IT at Liverpool John Moores University (051 231 5229)

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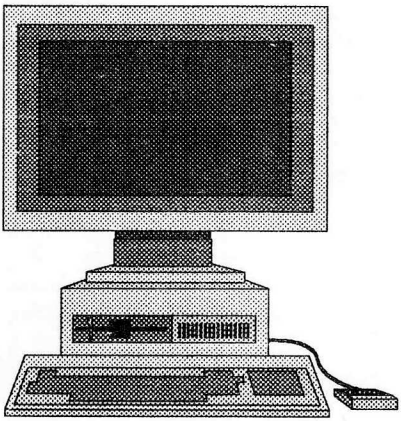
PC Serial Port Exteral Interface to Replace BBC User Port

Derek Henton

The BBC is an exceptional computer in the variety and functionality of the ports that are available to Control Technologists. Unfortunately the same cannot be said about the keyboard layout and the screen editing mode. Is it acceptable, I ask, to expect pupils to learn today's technology on yesterday's keyboards?



The development of an interface board that duplicates the BBC User Port has now been completed. The interface board simply plugs into the Serial Port (RS232) of any modern computer and is addressable using any programming language.

To meet the requirements of KS3 and KS4 a communication system has been written for Microsoft QuickBasic. Two subroutines are called by the pupil's main program. The **INPUTBIT** subroutine fetches the logic level, either Boolean "0" or "1" that is associated with the channel specified by **BitNumber** and stores that value in **Variable.** The **OUTPUTBIT** subroutine drives the logic level assigned to **Variable** down the channel specified by **BitNumber**. The syntax is as follows:

```
CALL INPUTBIT(BitNumber,
  Variable)
CALL OUTPUTBIT(BitNumber,
  Variable)
```

For example, using conventional terminology of PB0-PB7, say two LEDs are connected to PB3 and PB4, channels 3 and 4, and a motor is connected to PB7, channel 7. Then, further assuming that when both LEDS are active the motor is to be driven then the program would be as follows:

```
CALL INPUTBIT(3,LED1)
CALL INPUTBIT(4,LED2)
MOTOR=LED1 AND LED2
CALL OUPTUTBIT(7,MOTOR)
```

To simulate the electronics, the interface box has 8 input switches and 8 LEDS so that the pupils can write their programs and ensure their functionality before connecting to electronic circuits. This allows a full class to gain experience in control technology using the interface box.

To recoup development costs and further Control Technology as a subject these interface boards with eleven (+5V DC, GND, CLK and PB0-PB7) 4mm banana sockets and the supporting Microsoft QuickBasic subroutines (INPUTBIT and OUTPUTBIT) are now being made available for sale. Also included is either a 9 pin or 25 pin serial cable as required.

If you are interested then please contact D.F.Henton, Head of Information Technology, The Royal Wolverhampton School, Penn Road, Wolverhampton WV3-0EG (Tele 0902-341230)

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RM Net LM - an update!

Steve Rochford

It's now 6 months since we went onto our multi-server network so it's time for a report on how it's working and my thoughts about what I would like to happen in the future. What follows are some of my experiences with the network and a sort of wish list; from time-to-time it will seem critical but basically I am happy with the system. I just want even more!

The system works all day, everyday with the servers hardly ever being stopped; I installed the S-Series support during at the end of August and that was the first time since the system was set up in April that one of the servers had been stopped. One of the interesting figures is given by the `net statistics server` command. This tells me that in the first three weeks of term over 4½ Gb of data was transmitted by the server!

Some of the good points about the system are those you expect from a good network (but don't get with some other suppliers' systems) - a user can log on anywhere and access their files and all the applications which are centrally available, irrespective of what kind of machine they are using. Printers are available at all locations and these again work straightforwardly in Windows, once Station Manager has been used to set them up. That doesn't sound like much of a list but I know that behind the scenes a lot of work was done to make this happen; a user doesn't have to know anything about what's going on and that's the way it should be.

There are, of course, things that I would like to change. Some of them are being changed, some perhaps, are just not possible. For example, the version of User Manager which I have does not update the RM accounts database on all the servers; you have to copy the file across at the end (RM's install engineer wrote an MTSL to do it but it takes a long time) but it would be nice if as you clicked the "Done" button for a user it updated that user's record on all the servers. There is a new version of User Manager which is coming which, I think, will correct this.

Another feature of User Manager is the way it creates user directories. By default, a user's directory is placed in the share called USERS on SERVERX1. This is fine for a small network but when you have 1200 users you end up with 1200 sub-directories on the user's drive N: - starting File Manager then takes about 5 minutes while it tries to read each directory. If you are typing in users manually then you can easily specify that the home directory should be in a sub-directory of USERS.

For example, I group users according to the year in which they joined the school so I have this year's entry in a sub-directory called INT93 and a user called AA1723 will have his home directory specified as USERS\INT93\AA1723. No problem there except that I didn't want to type all the details in by hand; I had got them in an Excel file and User Manager will read the CSV file that Excel can create. Sadly, User Manager rejects directory names with a \ character in them when doing an import so I've been changing 1200 records by hand. It's great fun and it takes about 60-90 seconds per record.

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In order to have Windows start in SVGA mode on 486s and CGA mode on 186s and to cope with scanners and special printers and so on, there has to be a database of information about the stations. Station Manager is the very powerful program which deals with all this and it really does make it possible to cope with all sorts of different machines on the network. I hate it! I installed a new laser printer in my main computer room. To make this available on each of 25 stations meant editing 25 records involving about 12 mouse clicks for each one. I would love to have the data made available as a CSV file so that it could be edited in Excel. I also want to make 5 or 6 connections per station but can only make 4 at the moment (the maximum I think I need would be 3 drives, P:, U: and T: and 3 printers - a dot matrix, a laser and a colour inkjet)

Printer Manager now seems close to perfection; it shows the servers in numerical order, the printers in alphabetical order, it flags ports on each server which are in use (handy because you can have over 40 ports on a server if you use LanSpool) and it hasn't gone wrong at all. Applications Manager is also pretty good - I would prefer it to start on the server which currently has my drive P: rather than always looking at SERVERX1 but at least it's consistent. The Queue Manager program which has just been released is very helpful (except on the occasions when it tells me that I don't have the privilege level to control printer queues!) but it doesn't show the servers in order and picks the server to show you first at random. It's a relatively early version so I'm sure it'll get better.

RM sell Intel's LanSpool to allow you to have printers which are shared but remote from the server. They have "added value" by including a much better installation program and allowing you simply to add a station startup program which says whether the printer is serial or parallel (rather than the complicated process which Intel require). I regularly read the Lan Manager forum on CompuServe and remote printing is one of the common topics. LanSpool seems to be a favoured solution but a thread I read recently confirms my belief that you really need to dedicate a station to running it. You just can't let a user log on to the machine which is running the LanSpool program to print files. The problem seems to be that if a user is logged on then the machine is more likely to crash (this is true, of course, for any computer - a station left at the log on screen doesn't crash; it only crashes when someone uses it!) If the station fails, jobs that are printing get messed up. Re-booting the computer restarts the LanSpool program but puts the jobs that were printing on hold. Provided users know that this has happened they can line up paper in the printer and release their jobs using Queue Manager but it's not really ideal.

Still with printing, however, is another of RM's big achievements. The original code for handling printing through the parallel port from OS/2 was buggy; if you switched off a printer attached to the parallel port it could cause a trap error and bring down the server. RM have now taken Microsoft's code and fixed it. I understand that the new fix should be with you soon.

My biggest desire is to have Windows 3.1. There are various

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reasons for this, not the least being that it fixes a number of problems that were present in 3.0. The main thing that I want it for is True Type fonts. It really would be good to set the Word template to have 10 point Times New Roman as the default font and know that every printer would be able to print it. I know that this means printing as a graphic to most printers but this is a small problem; most of the work we print is handled as a graphic, anyway. I've been trying various ways of getting Windows 3.1 on a network station. The most promising so far seems to be to have it installed on a hard disc with the drivers for network use added when you run Setup. I wrote a special config.sys for the station which shells to a special loader program which doesn't run rmwin.com but instead loads win.com from the local hard disc. This works but is not elegant. You lose all of RM's logon facilities although you can log on from control panel. It does at least allow people who have computers at home to bring in work to print and get something looking like the work they saw on their screens at home. I think that a cleaner route would be to use Windows for Workgroups on a station and then use this to connect to the server; this can be done because it will coexist with Lan Manager. Again, you lose the RM logon system (so no printers set up, no properly made connections to the user's directory, no group logon, no logon programs and so on) but you can make connections with File Manager.

Given that a big reason for wanting to move to Windows 3.1 is its fonts, I've also been looking at Adobe Type Manager. This works fine with Windows 3.0 but there's one problem. When Windows starts the ATM driver looks for a file called ATM.INI in the directory pointed to by WINDIR. On RM Net LM this is T: so I made sure that ATM.INI was there and restarted my station. Loader.exe (the program which gets the station started on the network) and RMWNA (the program which handles logging on) are very thorough at making sure that no files are left on drive T: to confuse the system; they will clear out files which are read-only and hidden. This means that you can't have ATM.INI on the drive when Windows starts so you can't have Adobe Type Manager. Back to the drawing board!

On a fun note, one of the things that I've found is how to change the Windows logo that appears briefly as Windows starts. You can have any ***simple*** bitmap as the signon screen (by simple I mean no more than about 20k in size) but remember that you should not alter ***any*** system files unless you know what you're doing and particularly those which start Windows - you could leave yourself in a position where you can't put things right because you can't start a station.

I spent a day recently trying to find out why I couldn't restart two of my servers after I had installed the S-Series support software. In the end it turned out to be very simple (and nothing to do with the upgrade). I'd accidentally deleted the directory called SCRIPTS in the USERS share on these two servers; there's nothing in this directory so it's easy to lose it accidentally and it makes no difference when the server is running. If this directory is missing, however, then the NETLOGON service won't start on the server and this then stops the rest of the server from starting. It's

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easy to see what was wrong now but it took me a long time to find out! If you do make any changes, make a note of what you've done and make sure you know how you can get back to where you were. If you can't get back then don't make the changes!

Sytos isn't an RM product at all; it's simply the tape backup software which is normally shipped with Lan Manager. It works but it was certainly written by someone who'd learnt lots about writing user hostile software. If you've never had to restore a single file from a tape then try it sometime but don't do it when you're in a hurry and, for preference, don't do it when other people are using the network. Apparently Sytos is one of the best OS/2 backup programs available. I'm just glad I don't have to use any of the others! A useful feature of User Manager is that it now writes a hidden, zero length file called keep.me to each user directory as it is created. This prevents you deleting the directory and also allows Sytos to back it up.

Memory is another issue; I want more below 640k. The new S-Series machines are wonderful but they won't run PC Globe, for example, and they won't run Deluxe Paint in any Super VGA mode (which does not let them show off the excellent graphics capabilities!) The two things which would make the most difference would be improving the CD ROM access; either getting rid of MSCDEX altogether or having a version which runs in extended memory, and moving the redirector software into extended memory. I've no idea if either is possible (but I would have thought that the CD ROM ought to be) but they are on my wish-list!

Customer Support continues to get better; I rarely have to wait for the phone to be answered. I normally get the feeling that the people I'm talking to know what they're doing (and this is very different from the support services of some other companies; one I recently dealt with gave me lots of information about the coffee he was drinking but little of use about the faulty computer I had!) If you have an InSite support contract then you get invited to RM's seminars and these are always worth attending; the amount of information you can get makes them worth the price you pay.

Reliability is a major issue with a network. I need to know that I can use the computers without them going wrong or they are simply no use. Using my Nimbus at home the only time I virtually never see General Protection Faults (the Windows 3.1 equivalent of the UAE). In school, however, I expect to get a fair number of failures every day; most commonly a machine will freeze while logging on or when starting an application.

In spite of everything, the system is heavily used. If you log on as ADMIN and type `DIR R:\ /OD` at a DOS prompt you get a list of the user directories in date order. OS/2 date stamps directories when they are accessed so counting the number of directories with "today's" date tells me how many people use the system and on a typical day that can be as many as 300-400

To finish, let me reiterate that I am basically happy with my network. It doesn't always do what I want, it's sometimes maddeningly slow but I think that it was the right decision for my school.

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The Power User's Guide to Power Users

Power Users never read their software manuals; instead they get petty cash from their secretaries and use it to buy books which contain the phrase "Power User" on the cover. They then keep the receipt, to claim against tax. Software manufacturers write their manuals badly, and in computerese, in order to con Power Users into buying the manual ("XYZ for the Power User!") a second time. This extra revenue compensates the manufacturers somewhat for all the people who pirate their software and then buy Power User Guides to replace the manuals they never had...

Power Users never read their "Power User's Guide to ..." books, for the same reason they didn't read the software manuals in the first place. They do however skim the first two chapters, in which they make copious annotations (e.g. underlining phrases like "to get a directory listing, type 'DIR C: <enter>'. Note do not type the word '<enter>', or the quotes.")

Power Users get their companies to buy them 130MHz 80586 PS/4s with 100MB RAM and 5-gigabyte optical drives, which they bring home:

- to run Lotus 1-2-3G spreadsheets, producing PostScript graphs of their mortgage repayments;
- to DTP stern memos forbidding their Real Programmers from using unregistered shareware and PD utilities at work.

For this task, they get their computer upgraded with a 4096x4096, 12 billion colour hyper-VGA video display, and the memo employs a minimum of seven different fonts, plus bolding and italics, with at least five revisions to correct spelling errors, and to order the Cc: list in the most politically acceptable manner), and to play pirate copies of Tetris and PC-Golf which they haven't realised are infected with a virus.

Power Users get an identically equipped PC at work, so they can do the work they would do at home, if only ten-year-old Jimmy would stop playing Intergalactic Space Zombies for five consecutive minutes. The money for this PC comes out of the Real Programmers' software tools budget for the next three years.

Having worked out their mortagage repayments for the next 100 years,and having failed consistently to beat ten-year old Jimmy at Intergalactic Space Zombies, Power Users never touch their computers again; at work, they keep themselves occupied in meetings, so nobody will see them staring blankly at their PC screen. Meanwhile, the Real Programmers who work for them struggle by with aging IBM PCs (the original ones, with a grudgingly-added Tallgrass disk drives - yuck!)

Rather than read their "Real Users Guide to..." books, Power Users turn to their ten-year-old kids for technical advice ("yes, Jimmy, I understand that, but how do I get the directory on the D drive?")

Power Users sneak their children in outside office hours to work out why their spreadsheet figures don't add up and the Chairman's end-of-quarter

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report is due tomorrow. In a strange twist of human psychology, the ten-year-old children of Power Users think that when they grow up, they'll become Real Programmers and make cart-loads of money writing a game better than Intergalactic Space Zombies. (Sadly, they end up chugging out accounting software for Power Users.)

Power Users could master any PC application, if only they could figure out how to start it ("Uhhhm, it must be on this menu somewhere..".)

Power Users attend innumerable Power User courses, where they get a set of loose-leaf binders of notes they never read (but whose titles in genuine imitation gold leaf look impressive beside the "Power User's Guide to..." books which now accumulate a thick layer of dust on the shelf).

Power Users carry a pocket calculator for working out the cell values in their Lotus spreadsheets ("Um, I guess I didn't get to the section on formulas yet in my 'Power Users Guide to Lotus 1-2-3'".)

Power Users think "Your computer is stoned" is part of the DOS copyright banner.

When nobody is looking, Power Users pretend their mouse is a toy car, and race it around the desk.

Power Users keep a large box of tissues on their desk to wipe the saliva off the screen after playing Test Drive (BRRRRRM! BRRRRRM!)

Power Users can't figure out how to make their modems stop auto-answering, so they alway lunge on their phone when it rings in an effort to beat it. They're never fast enough, and spend the first 30 seconds of the conversation apologising, while the modem auto-ranges, and they earnestly promise that they'll have their secretary call IBM Technical Support to have the problem rectified.

Power Users panic when they lose those dumb keyboard templates that come with programs like Nerd Perfect (which are too brain-dead to have a decent user interface). They invariably mix up the templates when switching between programs. Power Users have problems with Windows, when they have two or more applications running, but room for only one keyboard template.

Power Users buy those dumb mice that have a nearly full ASCII keyboard built-in to them ("Swiss Army Mouse ™"). Power Users believe computer salesmen. Power Users will buy ANY program that makes wild promises on the box about increasing productivity. These boxes always look impressive on the bookshelf, beside the "Power User" books and course notes.

I'm sure none of our members matches the description above but I've certainly met people who do!

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Your Magazine

Many thanks to all those of you who have written articles for the magazine in the past but now it's time to re-emphasise that without you there is no magazine. I quite enjoy putting the magazine together and I'm always happy to take anything you send me and polish it up if you think that it's not quite good enough for publication but if I don't get any articles then you don't get a magazine!

I really do welcome items for the magazine from anyone. You don't have to be a great writer to send something in; send a letter or a short tip for the Hints and Tips pages, everything is welcome. If you want to phone and talk something over then please do; even if you aren't sure how to write something down then I can always include your ideas in Hints and Tips or as a plea for help.

I would be particularly pleased to hear from the people who are using RM computers at home; there are quite a lot of you out there. Some of you will be experienced at working with computers and I would be interested to know why you chose RM for home use. Others will have responded to RM's advertising, perhaps because your children use the same computers at school. How are you getting on with your new machine? Did you have any problems getting started? It doesn't matter if you still don't know the answer to the problem- this is how you'll find out - and it doesn't matter if you think that your problem was trivial; remember that there are many other people who are going to be in exactly the same position as you and will welcome the help that you can give.

If you are writing for me then the ideal is to send me a disc produced using Word or Word for Windows but I can cope with any word processor that runs on a Nimbus (I think). If what you are sending is short then a letter on good old fashioned paper is fine.

Finally, we pay for published articles at the rate of £5 per printed page (although all payments are at the Editor's discretion).

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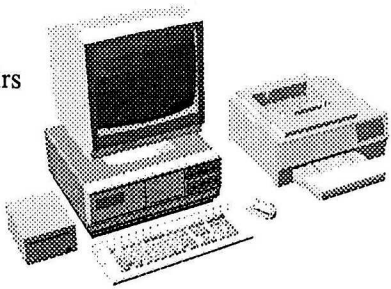

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